

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are requested.

By this amendment, claims 13-18 have been canceled and claims 19-27 have been added. Thus, claims 19-27 remain pending. Support for the new claim recitations can be found at least at: Fig. 179; column 62, lines 19-22; Fig. 160(a) and (b); column 58, lines 37-45; column 52, lines 28-37; Fig. 167; and column 31, lines 19-27. If the Examiner requires further supporting passages, she is invited to contact the undersigned by telephone.

In light of the Examiner's requirement, formal drawings for the present application are filed herewith.

Claims 13, 14, 16, and 17 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,600,672 in view of Glenn. It is submitted that this rejection is improper. The present application is a reissue application of U.S. Patent No. 5,600,672. Further, the original patent was surrendered to the PTO on July 18, 2001 in the parent application of the present application. The Serial No. of the parent application is 09/244,037. Moreover, as is the case in the present application, in the parent application claim 1 of the original patent 5,600,672 has been canceled, and original claim 1 is not present in any of the currently pending reissue applications of U.S. Patent No. 5,600,672.

Claims 13-18 were provisionally rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 13-18 of co-pending applications nos. 09/666,012, 09/667,525, 09/669,916, 09/668,068, 09/672,946, and 09/672,948 in view of Glenn. Claims 15 and 18 were additionally rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Glenn. These rejections are traversed and are believed to be inapplicable to new claims 19-27.

Each of independent claims 19-21, and 25-27 is drawn to a transmission and/or receiving apparatus or method. Claims 19 and 20 include recitations of a trellis encoder operable to trellis encode a data stream to produce a trellis encoded data stream, an interleaver operable to interleave the trellis encoded data stream to produce an interleaved data stream, and a modulator operable to

modulate the interleaved data stream to produce a VSB modulated signal. Claims 19 and 21 include recitations of a demodulator operable to demodulate the VSB modulated signal to a demodulated data stream, a de-interleaver operable to de-interleave the demodulated data stream to produce a de-interleaved data stream, and a trellis decoder operable to trellis decode the de-interleaved data stream to the data stream.

Method claims 25 and 26 include recitations of trellis encoding a data stream to produce a trellis encoded data stream, interleaving the trellis encoded data stream to produce an interleaved data stream, and modulating the interleaved data stream to produce a VSB modulated signal. Claims 25 and 27 include recitations of demodulating the VSB modulated signal to a demodulated data stream, de-interleaving the demodulated data stream to produce a de-interleaved data stream, and trellis decoding the de-interleaved data stream to the data stream.

By the arrangements recited in the present application, the interleaving is performed after the trellis encoding. During transmission the data stream may receive noise over a given portion of the signal. Thus the noise over such a portion might prevent the reception of the particular amount of the data that is required to perform the trellis decoding. However, with the arrangements recited in the present claims, the trellis encoding is performed first followed by the interleaving. Thus, if the noise affects a given portion of the signal during transmission as discussed above, at reception the de-interleaving will serve to disburse the given portion and the associated noise. This disbursing causes a much smaller segment of the noise to be present in trellis decoder, which increases the effectiveness of the trellis encoding because the fraction of the disbursed noise that is present in the trellis decoder is not large enough to prevent successful trellis decoding.

None of the relied-on co-pending applications, or the Chung or Glenn references recites the trellis encoding/interleaving/modulating relationships recited in claims 19, 20, 25, and 26, or the demodulating/de-interleaving/trellis decoding relationships recited in claims 19, 21, 25, and 27. Therefore, a person having ordinary skill in the art at the time the present invention was made would not have found it obvious to combine the disclosure of Glenn with the claims of any of the relied-on co-pending applications or with the Chung reference in such a way that the claimed inventions would

result. Accordingly, claims 19-27 are allowable over the relied-on co-pending applications and the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is in condition for allowance. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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